



T.C.

ESKİŞEHİR OSMANGAZİ ÜNİVERSİTESİ

FACULTY OF SCIENCES

MATHEMATICS AND COMPUTER SCIENCES DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
Applications of Financial Mathematics	

Semester	Number of Course Hours per Week		Credit	ECTS
	Theory	Practice		
3	3	0	-	5

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
x				x

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	
Objectives of the Course	Our aim is to train individuals who can analyze the complex problems faced by financial managers today with a systematic logic and, when necessary, search for solutions by applying some techniques.
Short Course Content	Types of interest, Applications of Simple and Compound Interest Theory; Annual Instant, Nominal and Effective Interest Rate Applications; Discount and Equivalent Interest Rates Applications; Cash Value and Accumulated Value in Cash Flow for Equivalent Values, Continuous and Discrete Values; Rent, Classification and Evaluation of Rent

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Have sufficient knowledge on Return-Risk mathematics and applications.	1,2	1,2	A
2 Understands asset pricing models and risk transfer methods. Understands risk management and portfolio approach.	1,2	1,2	A
3 Develops ability to analyze and solve problems encountered	3,4,5,9	2,10	A
4 Analytical thinking skills develop and the ability to make individual and independent decisions develops.	3,4,5,9	10,11	A
5 The ability to analyze and interpret data, apply interpretation to other data, and apply this information in a computer environment develops.	13	10,11	A
6			
7			
8			

*Teaching Methods 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

**Measuring Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	M.S. McCollum, Mathematics of Finance, North Caroline University Press, 2010
Supporting References	-
Necessary Course Material	

Course Schedule	
1	Interest Rules
2	Simple interest
3	Compound interest
4	Annual Instant Interest Rate
5	Nominal Interest Rate, Effective Interest Rate, Discount
6	Equivalent Interest Rates
7	Applications of Simple and Compound Interest Theory; Applications of Annual Instant, Nominal, Effective Interest Rate; Discount and Equivalent Interest Rates Applications
8	Midterm Exam
9	Equivalent Values, Cash Value and Accumulated Value in Cash Flow for Interval Values
10	Cash Value and Accumulated Value in Continuous Money Flow, Equivalent Maturity and Implementation
11	Rant, Classification and Evaluation of Rant, Payments of Rant
12	Deferred Rants, Changing Paid Rants Rant,
13	Multi-Paid Rental, Continuous Rental
14	Unlimited Rants
15	Problem Solving
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	14	3	42
Homework	5	3	15
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	20	20
Final Exam	1	2	2
Studying for Final Exam	1	30	30
Total workload			
Total workload / 30			
Course ECTS Credit			5

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	10
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	The ability to apply knowledges of Mathematics and Computer Sciences,	4
2	To have sufficient theoretical and practical knowledge of Mathematics at international level,	5
3	The ability of describing, modelling and solving of mathematical problems at Mathematics and related subjects,	5
4	The skill to solve and design a problem process in accordance with a defined target,	5
5	Skills to analyze data, interpret and apply to other datum and using these data on computer,	4
6	The skill to use the modern techniques and computational tools needed for mathematical applications,	3
7	The skill to make team work within the discipline and interdisciplinary,	2
8	The ability to improve oneself by following the developments on other modern, scientific and technological subjects as well as Mathematics and Computer Sciences,	2
9	The skill to communicate orally and in written way, in a clear and concise manner by having individual work skills and ability to independently decide and analytical thinking,	4
10	The skill to have professional and ethical responsibility,	2
11	The skill to have consciousness for quality issues and scientific research,	2
12	The skill to be sensitive to environmental issues related with problems and development of living area and consistent in the social relations,	1
13	Ability to solve problems in the working life faced to find an appropriate algoritms via mathematical modeling and to write computer programs,	4
14	The skill to developed design of software systems at different complex levels,	1
15	The credence of necessity of life-long learning and ability to apply the formation long-life learning.	1

LECTUTER(S)				
Prepared by	Prof. Dr. Ayşe BAYAR Prof. Dr. Süheyla Ekmekçi, Prof. Dr. Ziya Akça			
Signature(s)				

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